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## WHICH INTERNATIONAL AUTHORITY SHOULD BE DESIGNATED FOR VERIFYING THE IRREVERSIBLE ELIMINATION OF NUCLEAR WEAPONS UNDER ARTICLE 4 OF NUCLEAR BAN TREATY (TPNW)?

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### ABSTRACT

This paper analyses the most substantial gap of the Nuclear Ban Treaty (also known as the Treaty on the Prohibition of Nuclear Weapons, abbreviated TPNW), which touches upon the very aim of the treaty: the total and irreversible elimination of nuclear weapons. The Treaty aims at achieving ‘a world free of nuclear weapons’, but how is such an ambitious goal going to be achieved? The Nuclear Ban Treaty lacks specificity exactly in the area of verification, namely, it fails to appoint an international competent authority to ensure the effectiveness of the treaty under article 4 TPNW. This paper analyses the best international alternatives to police the verification regime under the Treaty and provides a framework for the designation of the most suited institutions, looking at their expertise, mandate, funding and degree of potential political backlogs.

Keywords: Treaty on the Prohibition of Nuclear Weapons; Institutional Designation; World Free of Nuclear Weapons, verification

### I. Introduction

Biological weapons are governed under the weapon destruction regime. So are chemical weapons, landmines, cluster munitions, and other such conventional and even some non-conventional weapons. And yet, nuclear weapons, the most dangerous weapons on earth at the moment are not totally prohibited.<sup>1</sup> Besides the fact that there is a profound gap between the traditional modes of thought and action, on one hand, and the objective conditions under which we live, on the other hand, this gap of non-proliferation of nuclear weapons refuses to close, eventually collapsing under its own gravity: playing games with survival issues. Historically, people and nations have been using weapons to kill men, cannons to tear walls apart, but regardless of contemporary justice elements and purely objectively perceived, the gun and the cannon could be considered as a rational means to an end. Nuclear weapons, in contrast, are not only a threat for war just by mere possession, but they are also not a conventional weapon in the semantic sense. Put in the context above mentioned, the unfortunate events at Nagasaki and Hiroshima events were by no means a rational means to a rational end. Nuclear weapons are instruments of unlimited, universal destruction. A nuclear war is a self-defeating absurdity. And

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<sup>1</sup> United Nations Office for Disarmament Affairs, Official Website, at: <https://www.un.org/disarmament/wmd/nuclear/> (accessed on 27 December 2018).

yet, 2019 is here, and we still cling on the use of nuclear weapons as a legitimate means, almost as a 'full' right of states to self-defence. The only weapons of unlimited destruction which did not manage to get the international consensus when it comes to their total and irreversible prohibition.<sup>2</sup>

As a result of promoting the awareness and understanding in regard to the humanitarian consequences of nuclear use, on the 7<sup>th</sup> July 2017, UN Member State Parties convened by Resolution 71/258 to discuss the potential of a legally binding instrument, aimed at the irreversible elimination of nuclear weapons, starting with their total prohibition. Resolution 71/258 is itself the product of the UN efforts to convene State Parties and reiterate the international consensus regarding the total prohibition of nuclear weapons in four previous Resolutions: Resolution 67/56 of 3 December 2012<sup>3</sup>, 68/46 of 5 December 2013<sup>4</sup>, 69/41 of 2 December 2014<sup>5</sup> and 70/33 of 7 December 2015<sup>6</sup>. After Resolution 71/258 has been passed, the efforts have started toward establishing a forum open for discussion, a starting point towards a potential convention on the total elimination of nuclear weapons. Parties met in the first session of the United Nations Conference to Negotiate a legally binding instrument to prohibit nuclear weapons, leading toward their total elimination in March 2017.<sup>7</sup> Building on the efforts of the Conference, on 16<sup>th</sup> of May 2017, the President of the Conference was informing the parties of the release of the legally binding instrument to prohibit nuclear weapons, leading towards their elimination on Monday May 22<sup>nd</sup>, 2017. On the same day, the President of the Conference gave a presentation of the draft text at the Palais des Nations.<sup>8</sup>

After leaving the parties consider the draft text of the draft treaty and after conducting consultations with the parties, the process of negotiating the final treaty had started. Drawing the attention to the common aspirations of the draft, (complementarity, reinforcement, simple and non-discriminatory and basis for the future), the President of the conference went over the main sections of the text, in order to provide assurance and a comprehensive overview to the parties.<sup>9</sup> The Conference reconvened on the 15<sup>th</sup> of June 2017, when the President moves to the substance of the draft, providing an article by article review of the text on a rolling basis with the aim of fulfilling the text of the treaty by the 7<sup>th</sup> of July 2017. The Treaty on the Prohibition of

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<sup>2</sup> H.J. Morgenthau, 'The Fallacy of Thinking Conventionally about Nuclear Weapons', in P. Foradori & G. Giacomello & A. Pascolini (eds), *Arms Control and Disarmament*, pp. 79-89.

<sup>3</sup> Resolution 67/56, UN Documents Official Website, at: <http://undocs.org/A/RES/67/56>, (accessed on 28 November 2018).

<sup>4</sup> Resolution 68/46, UN Documents Official Website, at: <http://undocs.org/A/RES/68/46>, (accessed on 28 November 2018).

<sup>5</sup> Resolution 69/41, UN Documents Official Website, at: <http://undocs.org/A/RES/69/41>, (accessed on 28 November 2018).

<sup>6</sup> Resolution 70/33, UN Documents Official Website, at: <http://undocs.org/A/RES/70/33>, (accessed on 28 November 2018).

<sup>7</sup> Note Verbale by the President on Draft Convention release, United Nations Conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination, UN Documents, at: <https://s3.amazonaws.com/unoda-web/wp-content/uploads/2017/05/NV-President-on-draft-convention-release.pdf>, (accessed on 28 November 2018).

<sup>8</sup> Letter from the President regarding briefing to be held in Geneva on 22 May on draft text of legal instrument, UN Documents available at: <https://s3.amazonaws.com/unoda-web/wp-content/uploads/2017/05/16May2017-Letter-from-Chair-to-convene-presentation-of-draft-text.pdf> (accessed on 28 November 2018).

<sup>9</sup> Briefing by the President of the United Nations Conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination. New York, June 12, 2017, UN Documents, at: <https://s3.amazonaws.com/unoda-web/wp-content/uploads/2017/06/Briefing-by-President-12-June-2017.pdf> (accessed on 28 November 2018).

Nuclear Weapons (hereby abbreviated as ‘TPNW’) was born as a result of the conference which took place in between 27-31 March and 15-17 July in New York. It obtained 122 votes from the states being in favour of adopting it, but it requires up to 50 ratifications to enter into force.<sup>10</sup> The treaty takes a stand (although not a very strong one for its cause, as it will be further discussed) for the prohibition on participation in *any* nuclear weapon activities, including not to develop, test, produce, acquire, possess, stockpile, use or threaten to use nuclear weapons.

In this paper, I will develop on the current conflicting literature on the topic of TPNW and its potential. By providing the reader with an overview of the existing legal debate on the topic, it will be easier to build on the framework and understand the gaps in the new and ambitious treaty.<sup>11</sup>

Since 2010, at the Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons, several states and nongovernmental organizations called for Nuclear Weapons Convention which would aim at and achieve a world free of nuclear weapons.<sup>12</sup> This is how the UN Secretary General ended the conference with a proposal for nuclear disarmament, dating back to 2008, which proposed, “inter alia, consideration of negotiations on a nuclear weapons convention or agreement on a framework of separate mutually reinforcing instruments, backed by a strong system of verification”.<sup>13</sup> At the end of the conference, both the states and the civil society were positive that the political considerations will not burden the negotiation of a future treaty that would prohibit the use, transfer, participation in nuclear weapon activities.<sup>14</sup>

Seven years later, the prohibition of nuclear weapons under an international treaty upholds a highly controversial topic, especially since exactly the nuclear states<sup>15</sup> refused not only the signature and/or ratification of the treaty but participating in the initial negotiating process as well. While the nuclear states hold on to the idea that nuclear weapons are crucial for the security of the state, other states (mostly non-nuclear weapon states), emphasize the humanitarian and environmental impact of such weapons, seeking their prohibition.

Seen as a potential rush in the area of regulating the total elimination of nuclear weapons, scholars consider that the treaty addresses the topic at a dangerously early stage, having potential detrimental effects on the already existing (and working!) international efforts of nuclear non-proliferation. Looking, on one hand, at the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), signed in 1968 and becoming effective 2 years later, and on the other hand, at

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<sup>10</sup> Treaty on the Prohibition of Nuclear Weapons art 15(1), Sept. 20, 2017, U.N. Doc. A/CONF.229/2017/L.3/Rev.1 [hereinafter TPNW].

<sup>11</sup> Paul Meyer & Tom Sauer (2018) The Nuclear Ban Treaty: A Sign of Global Impatience, *Survival*, 60:2,61-72, DOI: 10.1080/00396338.2018.1448574

<sup>12</sup> International Campaign to Abolish Nuclear Weapons, 2010, Non-Proliferation Treaty Review Conference 2010: Towards Nuclear Abolition, at: [www.icanw.org/files/RevCon2010.pdf](http://www.icanw.org/files/RevCon2010.pdf), p. 2.

<sup>13</sup> 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, 2010, Final Document, Volume I, UN document NPT/CONF.2010/50 (Vol. I)\*, p. 20.

<sup>14</sup> J. Scheffran, 2010, ‘The Nuclear Weapons Convention as a Process’, paper presented at Atlanta Consultation III, 20-22 January 2010, Middle Powers Initiative, available at: [www.gsinsitute.org/mpi/AtlantaIII/Scheffran.pdf](http://www.gsinsitute.org/mpi/AtlantaIII/Scheffran.pdf); A. Ware, 2010, ‘A Way to Bridge the Gap: The NPT and a NWC Preparatory Process’, in World Future Council, *Securing a Nuclear-Weapon-Free World Today*, at: [www.worldfuturecouncil.org/fileadmin/user\\_upload/PDF/Securing\\_a\\_nuclear\\_weapon-free\\_world\\_today-online\\_version.pdf](http://www.worldfuturecouncil.org/fileadmin/user_upload/PDF/Securing_a_nuclear_weapon-free_world_today-online_version.pdf).

<sup>15</sup> China, France, Russia, United States, United Kingdom recognized as nuclear states under the NPT, but also China, North Korea, India and Pakistan.

the Comprehensive Nuclear Test-Ban Treaty, signed in 1996 but doomed for entering into force even after 22 years, what potential has the newly negotiated treaty (TPNW), which aims at encompassing the goals of all previous nuclear non-proliferation and disarmament treaties?

Learning from the experience with previous non-proliferation and disarmament treaties, such as the Chemical Weapons Convention and its verification regime, as well as its importance for upholding the goal of the treaty, this paper will address this controversy of the legal literature around article 4 of the TPNW: who will verify the irreversible elimination of nuclear weapons, and how will a relevant competent international authority will be designated?

In Section II, I will provide a background in the notion of verification, having a focus on the verification regime in the area of nuclear weapons. In order to provide for the best alternative of institutional verification of the elimination of nuclear weapons, the verification regime *per se* will be analysed. Starting from a normative point of view, this chapter will compare the ideal verification regime as it should be, with the already existing verification systems. As ‘case studies’ for looking into performance of the existing and past verification regimes, the Non-Proliferation Treaty and the Comprehensive Nuclear Test-Ban Treaty will be analysed. The conclusive remarks of the chapter will address the lessons that can be taken from both previous international treaties, namely why the NPT accomplished entering into force with 190 state parties, while the CNTBT failed entering into force after 22 years.

Section III will solely focus on the potential of the Nuclear Ban Treaty (TPNW), starting from its goal and potential legal continuation in the system of nuclear non-proliferation, to its substantive provisions, as well as their shortcomings. Zooming in, the discussion will culminate with the dilemma under article 4 TPNW, analysing the scope and aim of the particular article, in the view of the overall text of the treaty and drafter’s intention.

The potential alternatives for solving the issue of designating an international competent authority are expanded under Section IV. Here, three main alternatives will be provided. The institutional options will be compared with each other, in a competing advantages/disadvantages strategy, in order to strike a balance of all the interests under the TPNW. This chapter will also address potential economic and social issues in designating the respective international actors to verify the total elimination of nuclear weapons.

In the concluding chapter, Section V, I will provide an argument and take a stand regarding the best potential alternative of international competent authority, developing on its potential of being accepted by the international community while fulfilling its role under the treaty.

This paper uses three main methodologies in order to underline how the institutional verification under the TPNW should be, and which authority would constitute the best alternative for the goal of the treaty: normative, comparative and doctrinal. The empirical, or doctrinal research method, is defined as ‘a synthesis of various rules, principles, norms, interpretative guidelines and values. It explains, makes coherent or justifies a segment of law as part of a larger system of law.’<sup>16</sup> Thus, this research method is crucial for reaching the answer for this paper, as I will look at the existing rules, norms and customs, in order to justify the verification regime under the TPNW.<sup>17</sup> Comparative research, which is part of the normative

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<sup>16</sup> *Australian Law Dictionary*, Oxford University Press, 2010 Trischa Mann (ed), p. 197.

<sup>17</sup> N. J. Duncan & T. Hutchinson, ‘Defining and describing what we do: Doctrinal legal research.’, *Deakin Law Review*, 2012 17(1), pp. 83-119.

research spectrum,<sup>18</sup> looks at all potential institutional alternatives for designating a competent international authority in the area of nuclear weapons. For this, I aim at making a parallel with different legal approaches to the area of disarmament of nuclear weapons, namely the NPT and CNTBT. To address the topic of this paper, I will use the normative methodology, in order to reach a conclusion to the legal question, as well as provide arguments and alternatives to the proper designation of an institution to oversee the verification regime as it should be.<sup>19</sup>

## **II. Verifying and Monitoring the Non-Proliferation and Disarmament Regime of Nuclear Weapons.**

This section will provide information on the background, aim and scope of verifications programmes for ensuring not only non-proliferation and disarmament of nuclear weapons, but their efficiency and effectiveness as well. Thus, the second chapter of this paper will dive into the verification and monitoring regimes as they should be, in international treaties. In order to analyse the effectiveness of verification regimes, as well as the international consensus (or lack of) in their designation, I will provide two examples: the verification regime under The Non-Proliferation Treaty and the monitoring mechanism under The Comprehensive Nuclear Test-Ban Treaty. The two treaties are recognized as the stepping stones that led to the TPNW being born.<sup>20</sup>

### **II. 1. What Verification under an International Treaty Is and what Is its Goal?**

Explained plainly, verification establishes and reveals the truth about something, with evidentiary accuracy. This process is comprehensively defined by the International Partnership for Nuclear Disarmament Verification, as follows: verification [...] is the “iterative and deliberative processes of gathering, analyzing, and assessing information to enable a determination of whether a state party is in compliance with the provisions of an international treaty or agreement.”<sup>21</sup>

This is also referred to as ‘non-compliance with the terms’ of the respective treaty establishing a verification system. A verification regime does not have the sole purpose of discovering non-compliance, but it also underlines the efficiency with which the state has been complying with its treaty obligations.<sup>22</sup>

The ideal steps of the verification process are the following:

- Monitoring actions relating to fulfilling the provisions of the treaty;

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<sup>18</sup> A. R. Mackor, 'Legal Doctrine As a Non-Normative Discipline', *Law and Method* (2012) 2 January 2012.

<sup>19</sup> S. Taekema, 'Theoretical and Normative Framework for Legal Research: putting Theory into Practice', *Law and Practice*, February 2018, at: [www.lawandmethod.nl/tijdschrift/lawandmethod/2018/02/lawandmethod-D-17-00010/fullscreen](http://www.lawandmethod.nl/tijdschrift/lawandmethod/2018/02/lawandmethod-D-17-00010/fullscreen) (accessed 21 April 2018).

<sup>20</sup> Treaty on the Prohibition of Nuclear Weapons, Preamble, New York, 7 July 2017, at: <http://www.icanw.org/wp-content/uploads/2017/07/TPNW-English1.pdf> (accessed on 11 November 2018).

<sup>21</sup> International Partnership for Nuclear Disarmament Verification, Official Website found at: <https://www.ipndv.org/learn/understanding-nuclear-disarmament/> (accessed on 14 April 2019).

<sup>22</sup> T. Caughley, *Nuclear disarmament verification: survey of verification mechanisms*, Geneva: UNIDIR, 2016.

- Considering and evaluating evidence pointing to non-compliance with the already agreed upon obligations;
- Concluding whether compliance or non-compliance is occurring.<sup>23</sup>

The difference between verification and monitoring is that the verification mechanism is more often built into the treaty system, in order to enable inspections or other ancillary means of assuring that the parties are respecting and implementing the under the treaty.<sup>24</sup> The final “product” of a verification mechanism is the determination of compliance/non-compliance. This is the case of the International Atomic Energy Agency (IAEA), established under the Non-Proliferation Treaty, in order to promote the peaceful use of nuclear energy and to inhibit the use of nuclear weapons.

A less intrusive verification mechanism is monitoring. Monitoring is the process of observing activities of the parties that are relevant to the fulfilment of their duties under the particular treaty. This is the role of the International Monitoring System of the Comprehensive Test Ban Treaty (CTBT), which has the aim of determining whether nuclear weapons test have been conducted, regardless of the implementation status of the treaty.

This paper focuses on the role of verification, since the realistic achievement of complete nuclear disarmament can only be effectively pursued by ensuring the compliance of states with the obligations under a treaty on arms control or disarmament. Credible verification to establish compliance or non-compliance is the core of achieving a world free of nuclear weapons.<sup>25</sup> Thus, detecting and deterring violations of treaty obligations are integral elements in the negotiations to eliminate nuclear armaments. These elements have already been balanced, for better or for worse, in successful verification mechanisms, such as the one underpinning the effectiveness of NPT, as an objective mechanism with possible enforcement actions.<sup>26</sup>

Aside of the traditional verification and compliance determinant factors, another role of verification is to build confidence in the international community, pertaining to the fact that the interests of parties are protected under the treaty. In Carlson’s view<sup>27</sup>, there are two main verification options for multilateral disarmament treaties:

First, parties can negotiate incorporating the verification system in a single treaty containing the objectives of the treaty, as well as the commitments of the parties relating to the respective verification system. This is the example of the Chemical Weapons Conventions, taking around 20 years of negotiations.

Second, as found under the NPT, it is possible to have basic political commitments to a principal treaty, thus separating the legal and political matters revolving around the topic of

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<sup>23</sup> *Ibid.*

<sup>24</sup> UNIDIR, ‘*Nuclear Disarmament and Verification, Survey of Verification Mechanisms*’, UNIDIR Resources, at: <http://www.unidir.org/files/publications/pdfs/survey-of-verification-mechanisms-en-657.pdf> (accessed on 14 April 2019).

<sup>25</sup> B. Hanx, *Weapons of Terror—Freeing the World of Nuclear, Biological and Chemical Arms*, Stockholm: WMDC 2006, p. 169.

<sup>26</sup> Australian Safeguards and Non-Proliferation Office, J. Carlson, ‘Experience and Challenges in WMD Treaty Verification: A Comparative View, Australian Safeguards and Non-Proliferation Office’, *Background Papers on Nuclear Verification Issues*, 30 January 2009.

<sup>27</sup> *Ibid.*

establishing a verification system. In the NPT, parties conclude safeguard agreements with the agency designed to perform the verification procedures pursuant to the treaty (IAEA).<sup>28</sup>

Turning into the institutional elements in the context of non-proliferation regimes, nuclear verification has its origins at the United Nations Atomic Energy Commission (UNAEC). The first resolution of the UN which talked about the notion of ‘safeguards’ as a mean of both elimination and control of nuclear weapons and safeguarding the means for nuclear energy, dated back in 1946 and demanded the following:<sup>29</sup>

- extension between all nations the exchange of basic scientific information for peaceful ends
- control of atomic energy to the extent necessary to ensure its sole peaceful purposes
- elimination of other weapons of mass destruction
- effective safeguards through inspections and other means to protect the states complying with their obligations.<sup>30</sup>

Despite the initial inclusive vision of safeguards, the control system developed in the area of nuclear energy. The UNAEC dispersed after two years of negotiations in 1948 due to an impasse over the verification aspects, similarly to the faith of the CTBT.<sup>31</sup> After the UNAEC negotiations came to a dead end, the United States constituted their ambitions towards control of nuclear energy by creating an international body to regulate and promote the peaceful use of nuclear energy. The International Atomic Energy Agency (IAEA) is the main body verifying compliance with the NPT.<sup>32</sup>

Since then, the efforts towards nuclear disarmament continued, with the setting up of the Group of Governmental Experts in 2016, followed up by the initiative of the TPNW, the main framework analysed in this paper through verification lenses, and followed up by the future designation of an ‘international competent authority’ in the field of prohibition of nuclear weapons as the next, feasible step.

Taking small steps towards achieving the potential of the TPNW, this paper advocates for an alternative approach to the mere, explicit inclusion of a competent international authority in the

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<sup>28</sup> IAEA, Document INFCIRC/153.

<sup>29</sup> Z. Mian & T. Patton & A. Glaser, ‘Addressing Verification in the Nuclear Ban Treaty’, *Arms Control Today*, Arms Control Association, June 2017; Princeton University, ‘A Path to Universality Through Cooperative, Transparent, Verifiable and Irreversible Disarmament’, in United Nations conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination, A/CONF.229/2017/NGO/WP.46, June 22, 2017.

<sup>30</sup> Membership of the UNAEC initially included: Australia, Brazil, Canada, China, Egypt, France, Mexico, Netherlands, Poland, USSR, United Kingdom, United States; UN Resolution 1(1), Resolutions Adopted by the General Assembly During Its First Session, ‘Establishment of a Commission to Deal with the Problem Raised by the Discovery of Atomic Energy’, January 24, 1946, at: <http://www.un.org/documents/ga/res/1/ares1.htm>.

<sup>31</sup> The US wanted an international control system focused on nuclear energy, including prohibition on nuclear weapons, the Soviet Union argued that a prohibition convention should be established before any controls on nuclear energy. See ‘The Origins of the International Atomic Energy Agency’, B Goldschmidt - IAEA Bulletin, 1977, found at: <https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull19-4/19401281219.pdf> (accessed on 14 April 2019).

<sup>32</sup> IAEA Official Website, at: <https://www.iaea.org/about/overview/history> (accessed on 11 November 2018).

text of the treaty. Allowing for an adaptable verification system in a model of safeguards agreements, separate from the commitment to the main treaty, would constitute a fundamental step in creating a world free of nuclear weapons. The model of safeguards agreement, borrowed from the lessons provided by the NPT, entered into force two years after NPT entered into force. This leaves hope for the future adaptation of the verification system under the TPNW, as the following section of this paper will prove.

### III. 1. What Lessons can we Learn from the Past?

#### III. 1. 2. Treaty on the Non-Proliferation of Nuclear Weapons and its Success in the Area of Institutional Verification

The Treaty on the Prohibition of Nuclear Weapons has valuable lessons to learn from The Treaty on the Non-Proliferation of Nuclear Weapons. Having the roots within the NPT, the TPNW has more to borrow from the “parent treaty”, other than being ‘the continuation of negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control’.<sup>33</sup>

The NPT is the second major treaty in the area of nuclear disarmament, after the 1963 Limited Test Ban Treaty, being the one that truly influenced the direction of nuclear war.<sup>34</sup> The initial aims of the NPT were the following: to discourage non-nuclear weapon states in obtaining technology of building nuclear weapons, to ban the sharing of nuclear materials among states,<sup>35</sup> and to require all states without nuclear capabilities, signatories of NPT, to promise not to take any steps in furthering the acquisition of nuclear weapons.<sup>36</sup>

The NPT is still a cornerstone in the non-proliferation efforts today.<sup>37</sup> <sup>38</sup>Much of its success and effectiveness is guaranteed by the objective verification regime that guarantees the compliance of the five nuclear weapon states<sup>39</sup>. The innovative system is designed to ensure that non-nuclear weapon states are safeguarded from using nuclear energy for anything else aside of peaceful means.<sup>40</sup>

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<sup>33</sup> NPT, article VI.

<sup>34</sup> D. A. Kaplow, ‘Parsing Good Faith: Has the United States Violated Article VI of the Non-Proliferation Treaty?’, *Wisconsin Law Review* 1993 - 301.

<sup>35</sup> Unless the transfer of technology is peaceful and falls under the exception in the NPT, allowed by the International Atomic Energy Agency.

<sup>36</sup> C. T. MIERZWA, ‘The indefinite nuclear non-proliferation treaty: substantial accomplishments or ambitious hopes?’ *Detroit College of Law at Michigan State University*, Fall, 1995, pg. 555-556.

<sup>37</sup> P. Bennis, ‘Introduction: The South Asian Nuclear Tests’, *Testing the Limits*, Amsterdam/Washington: TNI/IPS, 1998, at: <https://www.tni.org/en/article/introduction-the-south-asian-nuclear-tests> (accessed 14 April 2019).

<sup>38</sup> CTBTO Preparatory Commission Official Website, Limits on nuclear testing

And the treaty on the non-proliferation of nuclear weapons,

<sup>39</sup> The ones officially designated as nuclear weapon states by the treaty.

<sup>40</sup> NPT, Article III.

The particularity of the verification system under the NPT is given by the voluntary conclusion of safeguards agreements by the nuclear weapon states, covering some or all their peaceful nuclear activities.<sup>41</sup>

### III. 2. IAEA Safeguards

The system of safeguards under the IAEA has as its main purpose verifying that a state is fulfilling its international commitments not to use nuclear programmes for nuclear weapon activities. The system consists of assessments of the correctness and completion of state's declared nuclear material and any nuclear activity. The verification measures are ensured thorough on-site inspections, monitoring, and visits in order to analyse the sole use of nuclear material for peaceful purposes.

Safeguard agreements measures can be carried out in two ways: by verifying state reports in which nuclear materials and nuclear activities are admitted and recognized as being part of the authorized NPT provisions<sup>42</sup>; or via the IAEA special inspection capabilities under the Additional Protocol, which complete the safeguards agreements, allowing IAEA to verify whether undeclared material or nuclear activities exist on the territory of a state.<sup>43</sup> The latter option might also be just the right alternative for filling the TPNW verification gap.<sup>44</sup>

The following are the most accurate and efficient verification procedures: ad hoc inspections, routine inspections, special inspections and safeguard visits. Routine inspections are the ones usually used, following a defined schedule and taking place within delimited nuclear facilities. The last two types of inspections can be conducted if the IAEA considers it appropriate, in the event that the state's information is not accurate or, in the case of safeguards visits, determining safeguards-relevant design information.

Having the above overview of the effective mechanism under the NPT, one can easily understand why this treaty is one of the corner stones of nuclear non-proliferation and disarmament: a steady, clear treaty, with an appropriate verification mechanism, that was "sold" more as a healthy option, rather than a necessary evil.

To conclude the lessons learned by international community, as well as the drafters of international treaties in this area, I would like to address some of the concerns raised within the legal international community, regarding the TPNW as being 'a sign of global impatience' and a threat for the foundations of the nuclear non-proliferation regime established by the NPT.<sup>45</sup> This paper argues that the TPNW is a continuation of the NPT, a more radical and ambitious

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<sup>41</sup> United Kingdom concluded such agreements with the IAEA and EURATOM, being one of the very first state parties to them, in 1978. The UK was followed by France in 1981, the Soviet Union in 1985, China in 1988.

<sup>42</sup> 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document, document NPT/CONF.2010/50 (Vol. I), p. 20.

<sup>43</sup> Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards, IAEA document INFCIRC/540, 1 September 1997, also known as the Model Additional Protocol.

<sup>44</sup> By this I mean including an Additional Protocol to the TPNW, in which the mandate of the 'competent international authority' will be developed, instead of including it in the main text of the treaty. Although both the treaty and the additional protocol would have to be agreed by the State Parties, it is a matter of timing and political strategies in having them accepted one at a time.

<sup>45</sup> Paul Meyer & Tom Sauer (2018) The Nuclear Ban Treaty: A Sign of Global Impatience, *Survival*, 60:2, 61-72, DOI: 10.1080/00396338.2018.1448574.

“son”, taking non-proliferation at a new level, in a manner which should follow the success enjoyed by the NPT. TPNW will not undermine the NPT but merely extend it,<sup>46</sup> proven even by the Vienna Convention on the Law of Treaties: when two international treaties deal with the same subject matter, the parties to the later treaty do not include all the parties to the earlier treaty, and the later treaty does not affect or disrupt the existing treaty relationships for states not joining the new treaty.<sup>47</sup>

### III. 3. The Comprehensive Nuclear-Test-Ban Treaty and Why it Failed

The Comprehensive Nuclear-Test-Ban aimed at banning all nuclear explosions. Opened for signature in 1996, it did not manage entering into force, even if in the 1995, at the NPT Review Conference, the implementation of the CTBT was urged to support and strengthen the efforts of the NPT. As of March 2008, 178 nations signed out and 144 nations had rejected the treaty in 1999. In order to entry into force, 44 nations possessing nuclear reactors must ratify it. 35 had ratify it, and 7 had signed.

As of July 2012, 183 states had signed the treaty and 36 had ratified, in the aftermath of seven conferences held to facilitate the entry into force of the CTBT. Diving into the text of the treaty, article II of CTBT aimed at establishing the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). Dependent on the entry into force of the treaty, the organization never came to be.<sup>48</sup> However, an innovative solution was taken in the interim: establishing a Preparatory Commission for the CTBTO (PrepCom), which would carry out the necessary preparation for the effective implementation of the Treaty.<sup>49</sup> PrepCom held 37 meetings from November 1996 to October 2011. Even more so, the United Nations also backed the entry into force of the CTBT by conducted entry into force conferences under article XIV every second year beginning in 1999.<sup>50</sup>

Article I of the Treaty sets the treaty’s basic obligation: not to carry out any nuclear weapon test explosion or any other nuclear explosion. The issue is that nuclear explosions cannot be detected without cooperative measures in the area of monitoring and verification. Thus, this issue was tackled under the mandate of the previously mentioned CTBTO. The treaty allows for a more intrusive type of verification as well: on-site inspections. This would empower international inspectors to travel to the site of a suspected nuclear explosion and search for conclusive evidence of such explosion. Contending views could not reach an agreement on both monitoring and verification, seen as crucial elements of “enforcement” which seemed to be the weaknesses of the CTBT treaty, aside of the potential loophole of states upholding nuclear testing efforts, claiming ‘peaceful testing’.<sup>51</sup>

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<sup>46</sup> this point is elaborated in detail in Treasa Dunworth, *Strengthening the NPT: International Law and Effective Measures for Nuclear Disarmament*, (Faculty of Law, University of Auckland, Discussion Paper, Oct. 2015), available at <http://www.converge.org.nz/pma/NZ-161015.pdf> (<http://www.converge.org.nz/pma/NZ-161015.pdf>).

<sup>47</sup> Vienna Convention on the Law of Treaties 1969, articles 30, 59, May 23, 1969, 1155 U.N.T.S. 331.

<sup>48</sup> This is why we look at this scenario in order to avoid having dismissed the ‘international competent authority’ under article 4 TPNW even before its adoption.

<sup>49</sup> Resolution establishing the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, adopted by the State Signatories, November 19, 1996.

<sup>50</sup> Final Declaration and Measures to Promote the Entry into Force of the CTBT, in the Conference on Facilitating the Entry into force of the CTBT, New York, 24-25 September 2009.

<sup>51</sup> H. Cousineau, ‘The Nuclear Non-Proliferation Regime: A U.S. Policy Agenda’, *Boston University International Law Journal*, 1994 Vol. 12:407, pp.407-442.

However, on-site inspections are not always the solution in verification regimes. Learning from the experiences of the international community with Iraq ignoring its obligations under both the NPT and the cease fire agreement, the consequence was the inability of international law to effectively “force” a state to abide by its obligations under an international treaty.<sup>52</sup>

To sum up the second chapter of this paper, drawing the line from the lessons that can be learned from past experiences in the non-proliferation regime, I would like to advocate for the following elements, in the light of the TPNW: stronger enforcement mechanisms and explicit consequences of the breach, not explicitly mentioned in the initial treaty, but in Additional Protocols. The withdrawal from the treaty has to be upon notice and with a legitimate reason, but not as extensive as it currently is under the TPNW.<sup>53</sup> If the withdrawal is in the light of an ‘extraordinary event’ such as under the CTBT, that would ‘jeopardize the country’s national interests’<sup>54</sup>, such key provisions should be further defined and upon submission of a request for withdrawal, such request should be discussed during the Conferences. If found unacceptable, sanctions/punishment should be imposed, in order to deter future withdrawals.<sup>55</sup> In terms of non-compliance, the involvement of the United Nations<sup>56</sup> could be used to accomplish and analyse whether non-compliance amounts to the use of force, the missing element in enforcement mechanisms of international law, especially in the area of non-proliferation.<sup>57</sup>

Regarding the verification system, contrary to the lack of enforcement mechanisms in the text of the NPT, the verification provision in the CTBT contains strict terms for complying with the treaty, such as subjecting the states to on-site inspections. In accordance with the statements of Vejay Lalla,<sup>58</sup> I find the verification mechanism under CTBT more explicit, and perhaps from here onwards, stronger, especially since the CTBT was being verified regardless of its entry into force. In terms of efficiency, I believe the TPNW should further, but not just follow,<sup>59</sup> the verification mechanism of NPT, with the ‘enforcement’ approached under the CTBT.

As emphasized in chapter III, the potential of the TPNW will be analysed, as well as its impact. In the light of the two, I will apply the lessons we already have from past experiences, and

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<sup>52</sup> After the 1991 Gulf War, Iraq undertook the obligation to eliminate all of its weapons of mass destruction and to allow the United Nations to verify compliance with on-site inspections. SC Res. 687 (Apr. 3, 1991), 30 I.L.M. 847 (1991) [hereinafter Resolution 687]. In December 1998, Iraq played a game of cat and mouse with the United States and UNSCOM, periodically kicking the inspectors out of the country. O. Schacter, ‘United Nations Law’, *American Journal of International Law*, 1994 Vol.88, Issue 1, pp.1-23. In 1997, UNSCOM reported that Iraq continued to develop biological and chemical weapons, specifically VX nerve gas.

<sup>53</sup> Treaty on the Prohibition of Nuclear Weapons, New York, 7 July 2017, available at <http://www.icanw.org/wp-content/uploads/2017/07/TPNW-English1.pdf>, accessed on November 11, 2018, article 17 provides for 12 months for the withdrawal to take effect.

<sup>54</sup> CTBT article 9, para 2.

<sup>55</sup> Consequences include sanctions, freezing state assets, a halt in loan assistance, or possibly military force. See RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 905 cmt. b (1987) [hereinafter RESTATEMENT].

<sup>56</sup> Richard L. Williamson, Law and the H-Bomb: Strengthening the Nonproliferation Regime to Impede Advanced Proliferation, 28 CORNELL INT’L L.J. 71 (1995).

<sup>57</sup> CTBT, art 5, para 2.

<sup>58</sup> Vejay Lalla, The Effectiveness of the Comprehensive Test Ban Treaty on Nuclear Weapons Proliferation: A Review of Nuclear Non-Proliferation Treaties and the Impact of the Indian and Pakistani Nuclear Tests on the Non-Proliferation Regime, 8 Cardozo J. Int’l & Comp. L. 103 (2000).

<sup>59</sup> By this I mean using the same NPT-IAEA strategy of verification, but not limit itself to it, since even this regime has its loopholes.

analyse whether they can improve the regime under the TPNW and defend it from its own doom.

#### **IV. Transforming the Dove of Peace into an Eagle – What Potential Does the Nuclear Ban Treaty Have?**

The International Campaign to Abolish Nuclear Weapons (ICAN) was awarded the Nobel Peace Prize for the efforts to achieve the treaty on the prohibition of nuclear weapons (TPNW), which was adopted in July 2017, with considerable support. The awarding of the prize may also be an incentive for possessor states ‘to initiate serious negotiations with a view to the gradual, balanced and carefully monitored elimination of the almost 15.000 nuclear weapons in the world’.<sup>60</sup>

The scholarly views are split in regard to the potential of the treaty, ranging from whether the treaty is either as an important step towards the nuclear free world, either as a risk undermining the international security architecture.<sup>61</sup> In the context of the latter, many nuclear armed states and many of their allies dismissed the likelihood of the lasting positive impact of the new regime to create better conditions for nuclear disarmament.<sup>62</sup>

Not even a year after the adoption of the treaty, both above mentioned premises are equally right, and wrong. This chapter analyses the validity of both premises and concludes with whether the verification dilemma under article 4, the substantive, most important loophole in the treaty, constitutes an impediment for future ratification and effectiveness.

##### **IV. 1. The Goal of the Nuclear Ban Treaty - Irreversible Elimination of Nuclear Programmes**

The Treaty on the Prohibition of Nuclear Weapons aims for states to consider measures for regular verifications and irreversible elimination of nuclear weapons programs, including long term verification processes and disarmament approaches. Thus, the crucial element in such a treaty is the monitoring and verifying of the elimination of nuclear weapons.<sup>63</sup> Without a comprehensive set of nuclear weapon verification processes, the whole aim of the treaty would be annulled.

In its preamble, the TPNW emphasise an important step towards achieving a world free of nuclear weapons, including the irreversible, total, and transparent elimination of nuclear weapons. Our focus on the treaty is constituted as follows: general prohibitions under article 1, implementation prescriptions and declarations under article 2, safeguards under article 3,

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<sup>60</sup> Nobel Peace Prize Committee Statement, Nobel Prize, October 25, 2017, at: [http://www.nobelprize.org/nobel\\_prizes/peace/laureates/2017](http://www.nobelprize.org/nobel_prizes/peace/laureates/2017) (accessed on 11 November 2018).

<sup>61</sup> Joint Press Statement from the Permanent Representatives to the United Nations of the United States, United Kingdom, and France Following the Adoption of a Treaty Banning Nuclear Weapons, U.S. Mission to the UN, July 7, 2017, at: <https://usun.state.gov/remarks/7892> (accessed on 11 November 2018).

<sup>62</sup> For instance, see C. Ford & G. Perkovich, ‘Briefing on Nuclear Ban Treaty by NSC Senior Director Christopher Ford’, Carnegie Endowment for International Peace, August 22, 2017, at: <https://carnegieendowment.org/2017/08/22/briefing-on-nuclear-ban-treaty-by-nsc-senior-director-christopher-ford-event-5675> (accessed 11 November 2018).

<sup>63</sup> Treaty on the Prohibition of Nuclear Weapons, article 1, New York, 7 July 2017, at: <http://www.icanw.org/wp-content/uploads/2017/07/TPNW-English1.pdf> (accessed on 11 November 2018).

towards the total elimination of nuclear weapons under article 4, and national implementation under article 5. These articles set the goal for the next section of this paper, focused on the verification, its requirements, feasible solutions and challenges under the treaty.

One way in which the treaty aims at enforcing the verification of nuclear weapons (currently) is through reinstating the safeguards of the International Atomic Energy Agency.<sup>64</sup> IAEA draws with its safeguards the obligations of non-proliferation along the main objective of the treaty, disarmament, supposedly obtaining the recipe for a world free of nuclear weapons.<sup>65</sup> However, as I will prove in chapter 4 of this paper, the interplay with IAEA, as well as another “international competent authority” should not necessarily be under article 4 TPNW and might actually burden the administrative aspects of verification, slowing down the attainment of the treaty.

#### **IV. 2. The Verification Dilemma under Article 4 of the TPNW**

In order to understand the lacunas in the verification regime, or potentially the strengths, as the prospective loopholes might be further on completed with additional protocols defining the verification process, similarly as with the NPT, we must first understand what and how the TPNW aims at prohibiting nuclear materials.

##### **IV. 2. 1. What Nuclear Activities is the TPNW Prohibiting?**

TPNW’s main prohibitions concern the activities under article 1, by all means: develop, test, produce, manufacture, otherwise acquire, possess or stockpile, transfer, receive and directly or indirectly control, use or threaten to use, assist, encourage or induce to engage, seek or receive any assistance, allow any stationing, installation or deployment for any nuclear weapons or any other explosive device in the territory of state parties or any other place under their control.<sup>66</sup>

TPNW has a solid foundation as it already builds on the substance of the NPT and CTBT in terms of nuclear disarmament and arms control and their verification and control. However, the TPNW has an extra step before jumping into the verification under article 4 through co-operation with an international competent authority: submitting declarations of possession or control of nuclear weapons under article 2 of the treaty, within 30 days. This has the role of preemptively minimizing the risk of nuclear breakout from prohibition, elimination or dual use of nuclear materials for the wrong purposes.<sup>67</sup>

##### **IV. 2. 2. Pre-Verification Requirements – Free of Verification Challenges?**

Even if pre-verification is an additional (possibly efficient) step, it also has to overcome a verification challenge in relation to the declarations under article 2 of the TPNW: verifying the completeness of the declarations, to the degree of estimating how much fissile material each state had previously produced.

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<sup>64</sup> Discussed in chapter 2 of this paper.

<sup>65</sup> Treaty on the Prohibition of Nuclear Weapons, article 3.

<sup>66</sup> *Ibid.*, article 1.

<sup>67</sup> J. Scheffran, ‘Verification and security of transformation to a nuclear-weapon-free world: the framework of the Treaty on the Prohibition of Nuclear Weapons, Global Change, Peace & Security’ 2018- 30, at: [www.tandfonline.com/doi/abs/10.1080/14781158.2018.1472565](http://www.tandfonline.com/doi/abs/10.1080/14781158.2018.1472565) (accessed on 13 April 2019).

Emphasized also by the President of the Disarmament Conference where the TPNW was adopted, emphasizing the example of the programme Disarming South Africa, one of the main objectives of verification was to<sup>68</sup> ‘assess the completeness and correctness of the information provided by a State Party’, while also visiting the facilities previously involved/associated with the production of weapons programmes.<sup>69</sup>

It is held that nuclear forensics should be available in the context of declarations in order to allow inspectors to verify the validity of the prime effort of the states and assert of verification of the accuracy of the pre-verification measures: declaring the prime stockpiles of nuclear weapons. Alternatively, states can hand over all their records documenting fissile material production to reinstate their commitments to the irreversible nuclear disarmament. The main conclusion is that unless states truthfully declare how much fissile material each state has produced, inspectors will not ever know, especially in terms of comparing how much material has been declared or not.<sup>70</sup>

Here, an alternative for the verification of accuracy of the declarations would be the intervention of the ‘international competent authority’ in order to verify not only the efforts in complete disarmament under article 4, but also the pre-emptive, sometimes even more important and decisive first steps, under article 2 of TPNW. A good example of an international organization providing for such pre-emptive steps in verification processes is constituted by the IAEA verification standards, calling for transparency and good faith co-operation throughout the whole verification process. The main question here is whether the act of submitting declarations under article 2 TPNW is an act of good faith that is strong and honest enough to be applied in certifying the peaceful alignment of a states’ commitment.<sup>71</sup>

Such transparency can be achieved through different measures: either verification on nuclear stocks, or civilian intervention in terms of material that is not military material, both in which objections to transparency should be admitted and remedied. Probably the most suited method to ensure the aim of the declarations under article 2 is fulfilled is to regularly require states to renew the declarations, in addition to putting them in the public domain, and allow an extension of the powers of the ‘international competent authority’ under article 4, to review such commitments submitted under article 2.<sup>72</sup>

#### IV. 3. Verification under Article 4 TPNW

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<sup>68</sup>The issue of obtaining such information is recognized by the international community, since aside from information obtained through intelligence and on-site inspections, the only other possibility would be to solely rely on declarations by the state providing assurance that all nuclear material has returned to peaceful use, assess the non-nuclear weapon components and all other nuclear material that has been destroyed.

<sup>69</sup>Non-Paper by the President, ‘Indicative list of objectives of the verification of the completeness of its inventory of nuclear material and nuclear installations in States Parties that have manufactured, possessed or otherwise acquired nuclear weapons or other nuclear explosive devices after 5 December 2001’ UN Documents, at: <https://s3.amazonaws.com/unoda-web/wp-content/uploads/2017/05/Non-paper-verification-objectives-for-former-nuclear-weapon-programmes.pdf> (accessed on 28 November 2018).

<sup>70</sup>JM. Acton, ‘Verifying zero: long-term aims, short-term steps’, in *Ways to strengthen the field of verification*: 20 February 2009, (United Nations Office for Disarmament Affairs 18 2009).

<sup>71</sup>A relevant example would be the intervention of IAEA in South Africa: after South Africa abandoned its nuclear weapons programme, it invited the IAEA to verify its fissile material production.

<sup>72</sup>JM. Acton & A. Persbo, ‘Verifying zero: long-term aims, short-term steps’, in *Ways to strengthen the field of verification*: 20 February 2009 (United Nations Office for Disarmament Affairs 18 2009) p.48

After completing the step of pre-verification undertakings under article 2, article 4 details the TPNW going into a substantive verification framework.

To be effective as an arms prohibition and disarmament treaty, the TPNW needs to adequately meet the requirements and aims of the verification process it (softly) regulates: confidence building, assure compliance and deter/sanction non-compliance.<sup>73</sup> The verification challenge should be tackled in an adaptive verification framework, for which the TPNW allows.

As J. Scheffran argues, verification needs to have different requirements in terms of prohibitions:

- Not having access to any nuclear weapons, nuclear materials or other components relevant for a nuclear weapons capability. In this area declarations, on-site inspections, and remote monitoring should be included.
- Deterring activities advancing nuclear weapons capability. This included preventing (re-) armament and ensuring the legitimizations and dual use capabilities.
- Disarm and disinvest existing nuclear weapons to the maximum degree possible
- Remove intentions to acquire nuclear material/weapons in the future<sup>74</sup>

This framework, translated in filing declarations, destructions of weapon stocks, materials and delivery systems, peaceful uses of nuclear material, and compliance against violations, materialize in the aims and purposes of the Treaty on the Prohibition of Nuclear Weapons, also referred to as the TPNW.

Under article 4, the only article dealing with the total elimination of nuclear weapons, describes the requirements under the treaty in three main sections:

- Article 4, paragraph 1 – if a state possessed nuclear weapons before 7 July 2017 and eliminated its nuclear weapons programme, is shall cooperate with the ‘international competent authority’ (designed under the treaty) for verifying the irreversible elimination of its nuclear programme.<sup>75</sup>
- Article 4, paragraph 2 – states that possess nuclear weapons but wish to join the treaty and then disarm, must act in ‘accordance with a legally binding, time-bound plan for the irreversible elimination of its nuclear weapon programme’, at a deadline set at the first meeting of State Parties.<sup>76</sup>
- Article 4, paragraph 3 – if a state falls under the provisions under paragraph 2 of this article, that state should conclude/maintain

‘safeguards agreement with the International Atomic Energy Agency sufficient to provide credible assurance of the non-diversion of declared

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<sup>73</sup> M. Datan, F. Hill, J. Scheffran, A. Ware, & M. Kalinowski & V. Sidel, Victor, *Securing Our Survival: The Case for a Nuclear Weapons Convention*, Cambridge, MA: IPPNW, IALANA, INESAP 2007).

<sup>74</sup> J. Scheffran, ‘Verification and security of transformation to a nuclear-weapon-free world: the framework of the Treaty on the Prohibition of Nuclear Weapons, *Global Change, Peace & Security*’ 2018- 30, at: [www.tandfonline.com/doi/abs/10.1080/14781158.2018.1472565](http://www.tandfonline.com/doi/abs/10.1080/14781158.2018.1472565).

<sup>75</sup> *Ibid*, article 4.1.

<sup>76</sup> *Ibid*, article 4.2.

nuclear material from peaceful nuclear activities and of the absence of undeclared nuclear material or activities in the State as a whole'.<sup>77</sup>

This provision also aims at designating the IAEA safeguards as obligatory to be maintained without prejudice of any additional relevant instruments that they may adopt in the future.

Analysing article 4.1 under the TPNW, it is emphasized that state parties 'shall conclude a safeguards agreement with the IAEA sufficient to provide credible assurance of the non-diversion of the declared nuclear material from peaceful activities and the absence of the undeclared nuclear material'. Despite the fact that the wording of the article underlines the idea of becoming part of the IAEA safeguards systems just enough to provide 'credible assurance', the treaty fails to establish a threshold on what constitutes an assurance that is credible enough: does becoming part of the IAEA safeguards system suffice, is article 4.1 the mirror of article 3 NPT regarding the obligation of state parties to negotiate safeguard agreements with the IAEA, or does it have a lower threshold?

Even if a state becomes a party of the IAEA safeguards system, the verification regime supporting the nuclear non-proliferation under the NPT has its verification challenges, as I will detail below. Moreover, one should not forget that the safeguards under the IAEA are mainly tailored for peaceful use of nuclear material, and not its total elimination and prohibition. If the verification regime under the NPT is not updated and is just 'blindly' adopted by the TPNW, the issues which were already faced and still constitute loopholes in the IAEA verification regime, will naturally, continue and the same challenges will be perpetuated.

Based on the *travaux préparatoires* of the TPNW, namely the Briefing of the President of the UN Conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their elimination, it is emphasized that the verification of the general obligations 'follows the same approach as several nuclear weapon free zones – State Parties would be obliged to apply the safeguards required by the NPT [...] The verification standard required by the draft is intended to be the same as that provided for in the NPT'.<sup>78</sup>

The limits of verification under the NPT treaty are largely based on cooperative schemes. By becoming a member of the treaty, the state accepts the non-proliferation obligations, together with the intrusive and rather cooperative verifications, including on-site inspections. Aside to the substantive limitations under the IAEA, NPT and the relation with the member states, there are also technical limitations that need to be addressed, especially in relation to detecting potential breaches of the non-proliferation obligations. Put in the context of a world free of nuclear weapons, the authority which will be recommended needs a way to tackle this issue as well.

In order to emphasize on the point of the challenges faced by the IAEA and how the NPT's verification programme was undermined in the past, the discovery of Iraq's nuclear weapon programme, the suspicion of the Democratic People's Republic of Korea and the long refusal of North Korea to fulfil its safeguard obligations, emphasize the consequences of the NPT and IAEA challenges. As a result of the situations mentioned, what did the IAEA do? It took an even more cooperative approach, regarding that past mistakes were made not because of the

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<sup>77</sup> *Ibid.*, article 4.3.

<sup>78</sup> Briefing by the President of the United Nations Conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination. UN Documents 2017, at: <https://www.un.org/disarmament/tpnw/president.html>.

nature of the verification regime, solely on cooperative foundations, but because of the lack of and unreliability of the documentation provided by the state-parties.<sup>79</sup>

For these reasons, I propose a departure from the IAEA verification regime and verification structure, and I will demonstrate the reasons for it under Chapter V. Such ‘departure’ is not because having the IAEA inspect the commitments of states under the TPNW would require an amendment and extension of IAEA statute (which would probably be impossible), but because such an extension might shake the reliability of states in the already existing verification regime for the disarmament of weapons. Even if the IAEA system is not perfect, one cannot argue with its efficiency in *its area of action*, disarmament.

But one should not forget that verification is a process that can consist of multiple steps and can be either unilateral or cooperative in nature, or both. Would it not be better to design a new, perhaps complementary verification regime to the one already efficient in the area of chemical weapons, but with the addition of having an unilateral verification mechanism in place as well? Naturally, the unilateral verification would mainly be performed by the ‘international competent authority’ under article 2 and 4 TPNW, leaving ‘space’ for the involvement of other ‘not directly interested’ parties (in this case, both Non-Nuclear and Nuclear States)<sup>80</sup> such as NGOs, International Organizations specialized in the area of nuclear disarmament and non-proliferation, as well as the overall involvement of the public society.

There is a clear understanding that verification regimes should be designated so that violations are detected in time for appropriate action to be taken. The importance of verification is to ensure that the party contemplating cheating on a treaty realizes it cannot do so without running substantial risk of being found out.<sup>81</sup>

#### IV. 4. Article 4 Dilemma?

Will article 4 of the TPNW have the necessary means to appoint and cooperate with a competent international authority designated under article 4.6 TPNW? And if not, and if this designation will not be completed before the entry into force of the treaty, what options will the Secretary General of the United Nations have when convening the extraordinary meeting of State Parties under the same article?

Article 4 leaves the designation of the most important verification aspect to the latitude of the State Parties. The paradox is that historically, states have had a tough time agreeing on the elimination of nuclear weapons related aspects. This points out two possible outcomes: either State Parties will ‘softly’ agree on appointing an already existent alternative for verifying the irreversible elimination of nuclear weapons, with little intrusive powers, potentially no inspections but merely monitoring powers; or State Parties will not agree on such designation, given the disbalance between nuclear and non-nuclear states’ position (non-nuclear weapon states being the only ones who participated to the drafting of the treaty), leaving the most

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<sup>79</sup> P. Lewis, ‘The New Verification Game and Technologies at Our Disposal’, in P. Foradori (ed), *Arms Control and Disarmament, 50 years of Experience in Nuclear Education*, 2018, p. 277.

<sup>80</sup> Non-nuclear states are also seen as interested parties for this example as any state that does not currently have the necessary technology for creating nuclear weapons would, (most likely) be interested in transferring such technology and material from nuclear weapons.

<sup>81</sup> P. Lewis, ‘The New Verification Game and Technologies at Our Disposal’, in P. Foradori (ed), *Arms Control and Disarmament, 50 Years of Experience in Nuclear Education*, 2018 p. 273-290.

challenging and decisive aspect of the treaty up to an objective, rather impartial actor, the Secretary-General of the United Nations.

This paper emphasizes the potential of the involvement of the Secretary-General in attaining the most suitable for appointment and designation of such a competent international authority. Now that the dilemma is depicted, the only question that remains is which competent international authority is suited for policing the irreversible elimination of nuclear weapons.

The possible alternatives are the following:

1. Maintain the safeguard regimes with the IAEA and offer IAEA an extension of its mandate, giving the organization power to inspect, verify and monitor states for the possession and use of both disarmament and non-proliferation of nuclear weapons;
2. Choose a competent international organization specialized in the non-proliferation of nuclear weapons to formally inspect, monitor and verify and uphold the goals of the TPNW. For this alternative, I will focus on ICAN, the winner of the Nobel Peace Prize in 2017 for its efforts towards Abolishing Nuclear Weapons;
3. Create a new subsidiary to the United Nations responsible for the non-proliferation of nuclear weapons, similarly to the already existing efforts in the area of disarmament.<sup>82</sup>

Aside of having a rather soft approach to accept the verification regime, in order to incentivize future nuclear states to adhere and ratify the treaty, TPNW also needs an adequate, reliable and efficient authority to lead the actions of the State Parties. Thus, emphasizing the potential that TPNW can create following the alternatives for strengthening the actual verification system, aside from the pre-verification requirements<sup>83</sup> and the actual verification process under the disputed article 4, there are initiatives which can be further implemented in future Additional Protocols, on the 'model' of IAEA becoming the competent authority of verifying the aims of the NPT. Thus, a transparency initiative, along with the extension of the mandate of the potential 'international competent authority' to verify not only the disarmament and non-proliferation process but also the completeness of the declarations through declarations that are not a once-off process. This would strengthen and fully complement the verification process under the TPNW.

This chapter concludes with the following decision: it is noted why pre-verification controls under article 2, followed by a more extensive approach under article 4, can determine the future of TPNW (both under the right competent international authority) and differentiate it from other failed international efforts in the area of nuclear non-proliferation and disarmament, such as the CTBT. The following chapter will determine the most suited alternative for designating an institution for policing the TPNW.

## **V. Designating the Competent International Authority under Article 4 TPNW**

This chapter will develop on the most feasible alternatives for the TPNW in terms of designating a competent authority to verify the main goal of the treaty: irreversible elimination of nuclear weapons, prohibition of the development, testing, acquiring, manufacturing or

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<sup>82</sup> Although the United Nations has subsidiaries in relation to disarmament such as the Conference on Disarmament, UN Office for Disarmament Affairs, 1540 Committee, UN Institute for Disarmament Research, none of these institutions aim at the total and irreversible elimination of nuclear weapons.

<sup>83</sup> In accordance to article 2 TPNW.

otherwise possessed or stockpiled nuclear weapons or other explosive devices, pursuant to article 1 TPNW.<sup>84</sup> The proposed, most feasible alternatives to be appointed as ‘international competent authorities’, preferably under the authority of an independent arbiter such as the Secretary-General, under article 4.6 TPNW are the following:

1. IAEA as the main Agency for policing the treaty;
2. An already existing, competent international organization specialized in the non-proliferation of nuclear weapons to formally inspect, monitor and verify and uphold the goals of the TPNW, such as ICAN.

Throughout analysing the alternatives above, I will provide the advantages and disadvantages for every option.

### **V. 1. IAEA as ‘Competent International Authority’ under Article 4 TPNW**

The first alternative, putting an already existing international organization to take over the goals of the new treaty, is feasible, especially since State Parties already have to conclude safeguards agreements with IAEA under article 4 TPNW. However, IAEA is not an agency specialized in non-proliferation alone, but rather in limiting the use of nuclear material and atomic energy for peace, health and prosperity and provide for peaceful use of nuclear weapons (thus, not providing for their total prohibition).<sup>85</sup>

Under article 4 TPNW, IAEA is referred to in order to establish a ‘minimum effort’, which amounts to not more or less than ‘sufficient’ evidence that provides ‘credible assurance of the non-diversion of declared nuclear material from peaceful nuclear activities’. Undisputedly, one of the functions of the IAEA is promoting the UN actions in international cooperation and peace.<sup>86</sup> However, irrespective of the means, the main objective of the Agency is to ensure that the fissionable materials are used only for peaceful purposes. Non-proliferation and irreversible elimination of such material is outside of the mandate and nowhere close to the IAEA aim.<sup>87</sup> Despite the inclusion of the IAEA’s safeguards regime in the TPNW verification system, it does not do much to further the ambitious goal of the treaty, but rather gives a small proof of will on the part of the acceding States.

In order for the IAEA to prospectively become the ‘international competent authority’ of the TPNW, the Agency would certainly require an amendment to its Statute, in order to include the new functions, respective to a new goal: the irreversible elimination of nuclear weapons and other related material, ultimately giving the Agency full power to inspect, verify and monitor states for the possession and use of both disarmament and non-proliferation of nuclear weapons.

In relation to the IAEA ‘extension’ of powers beyond the NPT, there is also a potential issue in relation to funding of the safeguards at hand, while also expanding the Technical and Cooperation fund, directly affecting IAEA’s ability in terms of capacity building and persuasion.<sup>88</sup> Thus, the advantages and disadvantages of having IAEA as the agency which would potentially ensure the rightful implementation of the TPNW are the following:

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<sup>84</sup> Article 1 TPNW.

<sup>85</sup> IAEA Statute, 1957 article II.

<sup>86</sup> *Ibid.*, article III (B)(1).

<sup>87</sup> *Ibid.*, article III(B)(2).

<sup>88</sup> IAEA Official Website, at: <https://www.iaea.org/about/overview/budget> (accessed on 14 April 2019).

Advantages	Disadvantages
Most non-nuclear and nuclear states are already parties to the IAEA Statute, are familiar with its expertise and operation, making the extension of the IAEA powers easier for the states to accept.	In the same time, the fact that State Parties already have duties and responsibilities towards IAEA makes it less likely that they would agree to an extension of the responsibilities they already have.
Should the IAEA be the 'International Competent Authority' appointed under article 4 TPNW, this choice would disperse the barrier between disarmament and non-proliferation in regard to the NPT and IAEA Statute, bringing them under the competence and authority of the same institution.	Needs additional budget, expertise and technical resources, which would impose a struggle the IAEA is already dealing with <sup>89</sup>
IAEA already has necessary knowledge and the main framework concerning disarmament and its relevant monitoring, verification and inspection methods, considerably easing up the overall process of elimination, since all the information is centralized under the same authority. <sup>90</sup>	It would be pointless and impossible to have IAEA inspect for peaceful use of any kind of nuclear materials while also seeking their total abolition.

## V. 2. An already existing, competent international organization specialized in the non-proliferation of nuclear weapons to formally inspect, monitor and verify and uphold the goals of the TPNW, such as ICAN

As an example of an independent body researching, investigating and cooperating with state parties through the total elimination of nuclear weapons, one might look at the United Kingdom - Norway Initiative.

This partnership has been established at the beginning of 2007, as a research initiative in collaboration with the Verification, Research, Training and Information Centre (VERTIC), the United Kingdom Atomic Weapons Establishment and a number of Norwegian research institutes.<sup>91</sup> The level of trust and caution between the United Kingdom in relation to nuclear weapons disarmament and verification is a model for future strategies in the areas of nuclear weapons total prohibition. VERTIC is one of the instrumental NGOs in the area of verification, leading the inspection methodologies and projects, while guiding the inspection process.<sup>92</sup>

Another more than pertinent international organization which could sustain the efficient monitoring, verification and inspection of obligations falling under TPNW is ICAN: International Campaign to Abolish Nuclear Weapons, winner of the 2017 Nobel Prize for

<sup>89</sup> IAEA Official Website, at: <https://www.iaea.org/newscenter/statements/challenges-in-nuclear-verification> (accessed on 14 April 2019).

<sup>90</sup> IAEA Statute, article III, at: <https://www.iaea.org/about/statute#a1-3> (accessed on 14 April 2019).

<sup>91</sup> A. Persbo, 'Nuclear Arms Control in the 2010s, verification challenges', in *Ways to strengthen the field of verification*, 20 February 2009, (United Nations Office for Disarmament Affairs 18 2009).

<sup>92</sup> VERTIC official website, at: [www.vertic.org/pages/homepage/about/about-vertic.php](http://www.vertic.org/pages/homepage/about/about-vertic.php) (accessed on 21 November 2018).

Peace and thus, an internationally recognized actor in the area of nuclear non-proliferation efforts.<sup>93</sup>

ICAN is campaigning towards the ratification of the TPNW, involving not only the decision-makers of the states, but appealing to the civil society as a whole. This is the reason for which such an international organization might have the support of more people from civil society, together with other peace-related groups, activists and NGOs/ international organizations, rather than a newly established competent international authority.

Having an already existing, well established, internationally recognized international organization, together with other NGOs or relevant organizations, while also involving the civil society, would save the TPNW a lot of time and effort in establishing and running from zero a new authority. Plus, such new authority will have to make its impact in the scene, something ICAN has clearly done already.

Moreover, ICAN already took initiative, together with the Norwegian Peoples' Aid, in establishing the first 'watchdog' of the TPNW: The Nuclear Weapons Ban Monitor. The initiative became public on the 29<sup>th</sup> of October and it already tracks the progress of the treaty as well as the rate of adherence of states to the TPNW, in comparison with previous disarmament treaties, such as CTBT and NPT.<sup>94</sup>

Thus, the advantages and disadvantages of potentially having the ICAN, side by side with other potential initiatives<sup>95</sup> to officially monitor, verify and inspect the total elimination of nuclear weapons, as the competent international authority under article 4 TPNW are:

Advantages	Disadvantages
<p>Knows by the civil society as a whole, has great (recognized) impact in the area of nuclear disarmament, Democratization of verification, particularly the role for academia, NGOs and the media.</p> <p>Nuclear abolition will require action at all levels (public, city, national, regional and international) and in many forums not just the United Nations, such as UNFOLD ZERO<sup>96</sup></p>	<p>Not all NGOs are worthy of trust, lack of discipline, widespread concern about accountability (only to the funders).</p> <p>They play larger role in negotiations rather than verification.<sup>97</sup></p>
<p>Is a non-profit organization, thus any funding deadlocks or political threats are less likely to</p>	<p>In the event that the NGO will not obtain enough funding, the treaty will remain</p>

<sup>93</sup> Norwegian Nobel Committee, The Nobel Peace Prize for 2017, 2017, at: [www.nobelprize.org/nobel\\_prizes/peace/laureates/2017/press.html](http://www.nobelprize.org/nobel_prizes/peace/laureates/2017/press.html) (accessed on 10 December 2018).

<sup>94</sup> ICAN Official Website, at [www.icanw.org/campaign-news/launch-nuclear-weapons-ban-monitor/](http://www.icanw.org/campaign-news/launch-nuclear-weapons-ban-monitor/) (accessed on 5 December 2018).

<sup>95</sup> Such as VERTIC.

<sup>96</sup> UNFOLD ZERO is a platform for focus initiatives' involvement of civil society in nuclear abolition aims to complement, enhance and empower existing nuclear abolition networks and initiatives, through action within the UN system. UNFOLD ZERO also links to platforms for the abolition of other inhumane weapons and weapons of mass destruction, and to platforms for general and complete disarmament.

<sup>97</sup> P. Lewis, 'The New Verification Game and Technologies at Our Disposal', in Paolo Foradori (ed) *Arms Control and Disarmament, 50 years of Experience in Nuclear Education*, 2018, p. 287.

directly be involved (in comparison with IAEA and UN Subsidiaries)	‘empty’ in terms of verification and the international community will find itself right back at the start – what competent international authority is suited for the job?
Has already started a cooperative project with other organizations, in order to police the TPNW and it is actively promoting, as well as aiding its potential for ratification	Will states accept their sovereignty to be pierced and their weapons taken/destroyed by an NGO? What enforcement mechanisms can an NGO have to ensure this?

All three alternatives provided above has the same goal, differing in their methods, accountability, easiness to access the technology, experts and appeal to funding, involvement of multi layered institutions and overall potential success of the treaty. But on paper, it seems easy. Will any such international competent authority survive the recklessness of the political arena and the contains thereof? After having the most feasible alternatives presented, which one is most feasible to comprehend the TPNW challenges and uphold its aims, leading the way to the total prohibition and elimination of nuclear weapons?

#### V. Conclusion and Argumentation on the Best Alternative for a Verification Authority under Article 4 of NBT

This paper has analysed the potential of the TPNW, comparing it to successful non-proliferation regimes, such as the NPT, but also to unsuccessful initiatives in the nuclear weapons abolition initiatives, such as the CTBT.<sup>98</sup> After developing on the ideas behind verification, monitoring and on-site inspections under an international treaty, the present paper developed on the challenges found under the TPNW in terms of verification, monitoring and on-site inspections. The paper provides three institutional alternatives for filling the biggest compliance gap under the TPNW (along with their advantages and disadvantages), before concluding with the best suited choice for policing the treaty, from both a political, societal and legal point of view.

Furthermore, I will offer a final decision under the revolutionary regime under the TPNW regarding the most suited alternative for an international competent authority under article 4 TPNW, which would police the treaty and maintain its goals, while deterring states from not upholding their commitments. Such designation would also have to please the nuclear-weapon states, which are less likely to be as eager to accept the competence of such an authority, giving it powers to pierce their sovereignty, as well as their ‘inherent right’<sup>99</sup> to ‘self-defence’.<sup>100</sup>

To sum up the discussion of this research paper, the most feasible solution reached by this paper is the following: as presented under the last alternative, a competent international organization specialized in the non-proliferation of nuclear weapons to formally inspect, monitor and verify and uphold the goals of the TPNW, such as ICAN, might just be the right authority to verify the compliance of State Parties with the TPNW commitments.

<sup>99</sup> UN Charter, article 51.

<sup>100</sup> F. Grimal, ‘Jus as Bellum: Nuclear Weapons and the Inherent Right of Self-Defence’ in JL. Black-Branch (ed) *Nuclear non-proliferation in International law*, 2 201, 2016 p. 337.

Aside of the ideal stand on nuclear non-proliferation verification being a multi-lateral nexus of international organizations, NGOs, civil society, the point of a verification system is to deter states from nuclear activities, solve doubts about non-compliance and encompass a legal authority to judge a states' behaviour. However, the IAEA is not fully mandated to just verify the correctness but also the completeness of State's declarations, reports and actions and the UN is likely to develop political pressures within the Security Council, failing to reach a decision even in the adoption of a committee mandated for verifying the TPNW.<sup>101</sup>

Although the nuclear non-proliferation verification is not a matter only for the IAEA or the UN, such verification should be more accurately understood as a matter of intricate network of institutions that oversee global nuclear energy. A multi-layered, multilateral verification would allow NGOs and other international organizations with the right mandate, as well as the civil society, to transparently engage and consolidate long term commitments in upholding the irreversible and total elimination of nuclear weapons.<sup>102</sup>

After all, in a few years, we will be back to this same point, dealing with the same verification challenges, only with different weapons (such as Artificial Intelligence Warfare). Why not designate and provide the necessary tools to the already specialized institutions, which already make reports, create awareness, have the knowledge and the experts to fully verify states' compliance completely?

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<sup>101</sup> B. Kellman, 'The Role of verification' in J L. Black-Branch (ed) *Nuclear non-proliferation in International law*, 2 201 2016 p. 224.

<sup>102</sup> See Chapter 4 of this paper, Advantages and Disadvantages of the third alternative for appointing NGOs/international organizations to fulfill the role of the 'competent international authority' under article 4 TPNW.